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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,459	11/14/2001	Tarou Kaneko	NEC01P205-H1a	6999

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EXAMINER

WONG, ERIC K

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,459

Applicant(s)

KANEKO, TAROU

Examiner

Eric Wong

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 9, 11, 13, 15, 17-28, 35, 37, 39, 41 and 43-48 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-8 and 31-34 is/are allowed.
- 6) ☒ Claim(s) 1-4, 10, 12, 14, 16, 29-30, 36, 38, and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-8, 10, 12, 14, 16, 29-34, 36, 38, 40 and 42 in Paper No. 5 is acknowledged. Unelected claims 9, 11, 13, 15, 17-28, 35, 37, 39, 41, and 43-48 have been withdrawn from consideration.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 4, 10, 29, 30, 36, 38 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent Number 6,181,849 to Lin et al.

As to claims 1, 3, 4, 29, 30, and 40, Lin discloses in figures 7A-7C, an arrayed waveguide grating comprising:

- One or plural input and output waveguides for inputting signal lights;
- A plurality of input and output waveguides for outputting signal lights;
- A channel waveguide array having waveguides which are successively longer with predetermined waveguide length differences (67);
- An input slab waveguide connecting an input end of said channel waveguide array to said input waveguides; and
- An input and output slab waveguide (65) connecting an input end of said channel waveguide array to said output waveguides and having optical input/output

characteristics set to predetermined ratios for the respective output waveguides with respect to said input waveguides (Column 6, Lines 48-53).

As to claims 10, 36, 38, and 42, input ends of the waveguides have central positions displaced from corresponding focused positions in a direction perpendicular to central axes of the input waveguides (Figure 7A).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin as applied to claims above and in further view of United States Patent Number 6,188,818 to Han et al.

Lin discloses an arrayed waveguide grating with an output slab waveguide connecting an input end of said channel waveguide array to said output waveguides and having optical input/output characteristics set to predetermined ratios for the respective output waveguides with respect to said input waveguides, but fails to explicitly disclose said ratio depending on the differences between optical losses along respective paths in the output slab waveguide.

Han discloses a method of adapting waveguides in order to minimize insertion loss.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to alter and adapt a waveguide with optical losses along paths in the input or output slab waveguide to achieve minimal optical losses.

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6. Claim 12, rejected under 35 U.S.C. 103(a) as being unpatentable over Lin as applied to claims above and in further view of United States Patent Number 5,901,259 to Ando et al.

Lin discloses an arrayed waveguide grating with input and output waveguides, but fails to explicitly disclose input waveguides being inclined at the interconnected points.

Ando teaches constituting a waveguide device by inserting the optical waveplate into an optical waveguide such that the waveplate is inclined from the longitudinal section of the waveguide which minimizes losses.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide an inclined surface to reduce losses (Column 5, Lines 55-59).

Allowable Subject Matter

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art made of record fails to explicitly disclose or reasonably suggest a core layer being partly cutoff in paths interconnecting the waveguide channel array. Therefore claims 5-8, 31-34

Conclusion

8. The information disclosure statement (IDS) submitted on 01/10/2002 and 02/14/2002 have been considered by the examiner and made of record (note the attached copy of form PTO-1449).

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. United States Patent Number 6,418,249 to Nakamura et al. for a arrayed waveguide grating with slab waveguides with input/output characteristics set to predetermined ratios for respective output waveguides.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wong whose telephone number is 703-305-4741. The examiner can normally be reached on Monday through Friday, 830AM - 430PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

EW
May 15, 2003


HEMANG SANGHAVI
PRIMARY EXAMINER